

SWAMP's Clean Water Team and Citizen Monitoring in California



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The Need for Citizen Monitoring in California



Citizen monitors and watershed stewardship organizations can have vital roles in helping the state improve and protect water quality, especially during times of budgetary declines, staff downsizing and an urgency to grow programs.

With a population of over 38 million people, the demand for California's most precious resource, water, is growing exponentially. The usability of our water depends on its quality. To assist the state in meeting its water quality objectives, the Clean Water Team (CWT) was formed.



The Clean Water Team



The Clean Water Team (CWT) is the citizen/volunteer monitoring program of the (California) State Water Resources Control Board.

The CWT is a part of the Surface Water Ambient Monitoring Program (SWAMP) within the Office of Information Management and Analysis.



The Clean Water Team

Our Mission ... “To build and support the State’s Watersheds’ Stewardship through citizen monitoring in order to reduce and prevent water pollution.”

Our Vision... “Achieve effective, sustainable and integrated citizen monitoring programs throughout California.”



Number of Citizen Monitoring Programs Per Region Feb 2010

In a recent survey the CWT found over 250 programs. The numbers on this map represent programs located within a specific region but do not include multi-region programs.



CWT Program

The Citizen Monitoring Coordinator works statewide (9 Regional Water Quality Control Boards).



The program assists groups through six core functions: outreach and communication, technical and quality assurance assistance, training, loans of equipment, event support, and information management.

Promoting citizen monitoring including collaborations and use of citizen monitoring data is also a program priority.



What constitutes success of volunteer monitoring programs?



Everyone can answer this question differently.

Improved: Permitting, outreach, land use/zoning, BMPs, 303(d) list...

Number of: Volunteers, returning volunteers, monitoring days, outreach events, clean-ups, pounds of trash removed, trees-planted, storm drains stenciled, increased return of salmon...



Why the variability in defining success?

Monitoring projects and their sponsoring organization have different goals and objectives.

- Some are focused on education and want to reach out to as many people as possible.
- Others may have a very specific objective such as to protect steelhead habitat

These are two very different goals and what defines success for these two programs will also be very different.

Common Theme:
Improved and/or protected water quality



Strategies for Improving Water Quality

- Stakeholder Involvement
 - Watershed Management Initiative
- Science Based Stewardship
 - Production of actionable data
 - Implementation of Adaptive Management Plans
- Citizen Based Communications
 - Awareness
 - Education
 - Action



Survey Citizen Monitors That Obtain Water Quality Data



Citizen Monitoring programs in California have existed since the late 1990's. The CWT has been actively engaging with citizen monitoring programs, watershed stewardship groups and agencies since 2000.

To improve how the CWT can assist citizen monitors and communicate the value of citizen monitoring programs and their data, an information survey was conducted in 2011.



Surveyed Population

Emailed invitations were sent via the CWT email list (self-subscription), just over 1,000 e-addresses, and to email addresses from the Jan. 2010 directory.

- 57 valid surveys from 73 submissions



2010 Directory – 250 Groups

Asked groups to contact us if they did not want to be in the directory.

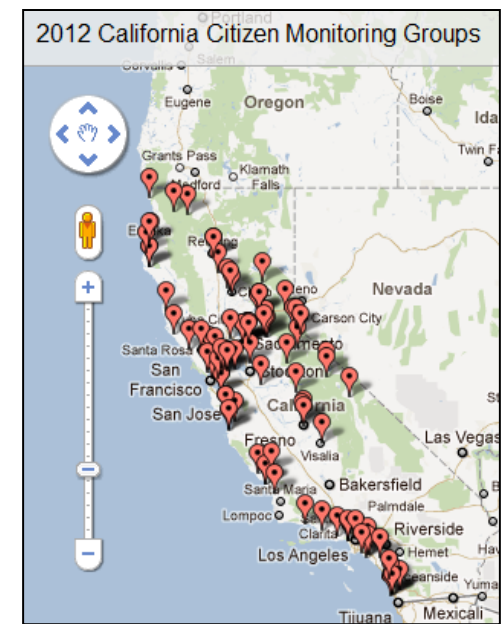
2010 Map - 248 Groups

2012 Map – 100 Groups

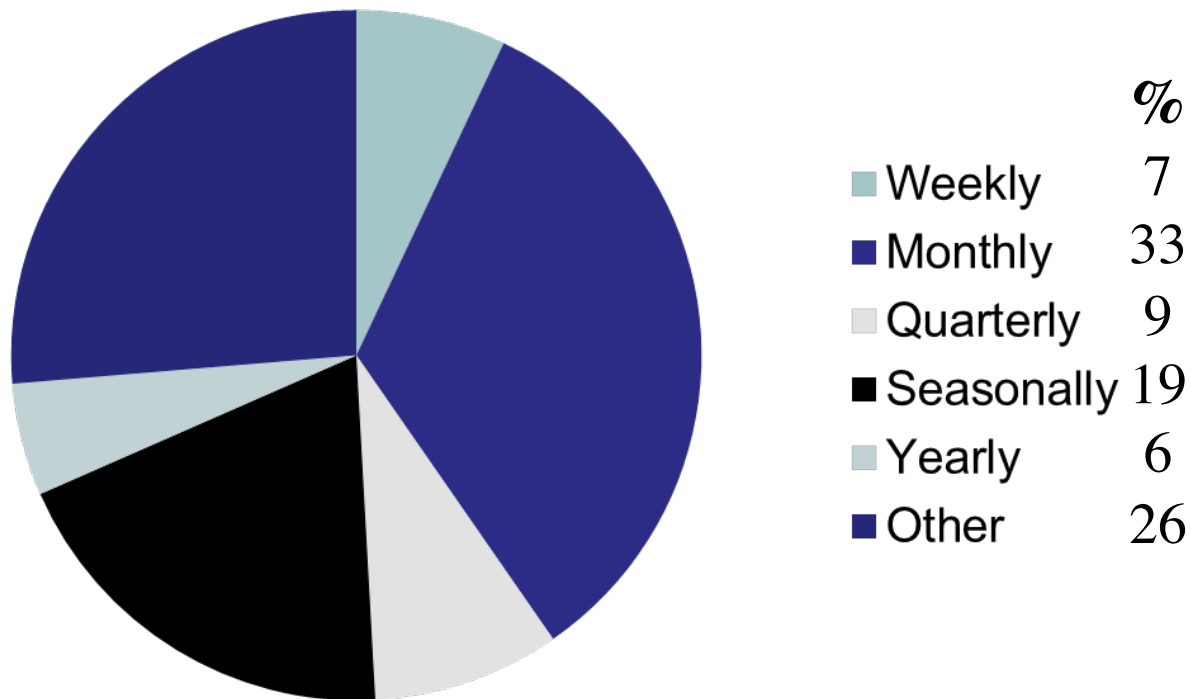
Contacted via email and asked only for those currently involved with water quality monitoring projects that are producing useable data (excluded educational only projects).

2012 Marketing survey - 463 Watershed

Stewardship Groups (includes Citizen Monitors)



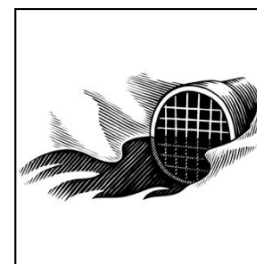
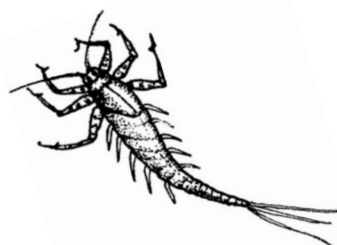
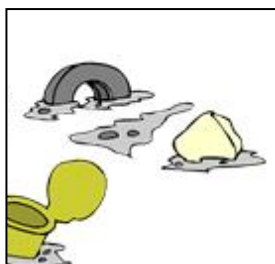
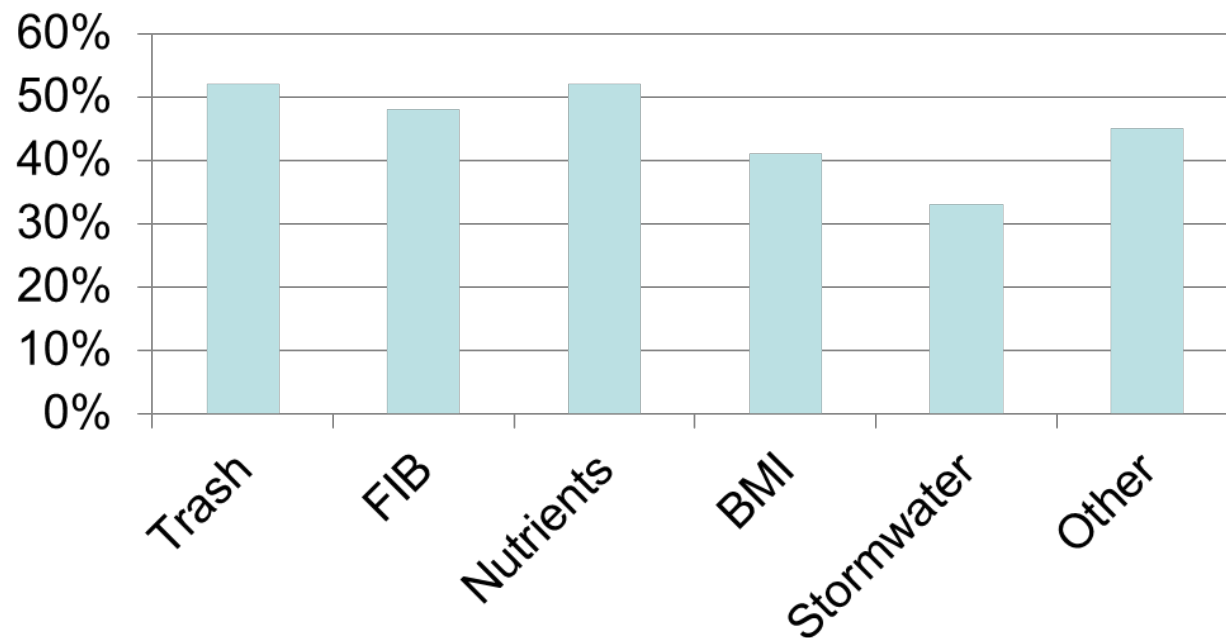
Monitoring Frequency



Other:

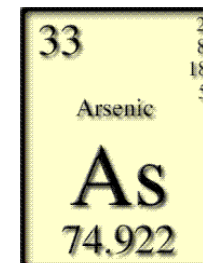
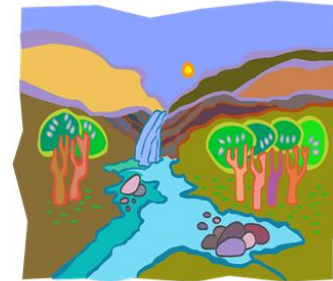
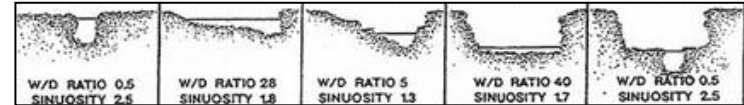
- Bi-Monthly
- 2-4 Times/Year
- 6 times/year
- Twice Monthly (2 groups)
- Spring and Fall
- Storm Events
- Varies
- 3 Times/Year
- Intensively in Summer
- Varies and Depends on the Waterbody: Weekly, Monthly Yearly
- As Requested
- Every Other Week

% of Groups Monitoring an “Other” Additional Parameter



“Other” Additional Parameters Monitored

- Highest and Lowest Stream Flow
- Pre-restoration Photo Documentation
- Environmental Conditions
- Pesticides/Metals
- Aquatic Vertebrate Assemblages
- Channel Morphology, Riparian LWD Inventories, Spawning Surveys, Snorkel Surveys
- TSS
- CRAM, Algae
- Nekton
- Habitat-Vegetation, Presence of Birds
- Metals, Detergents, Urea, Ammonia, Chlorine, Human Bacteroides
- Metals
- Flow, Shade, Human Impact
- Industrial Stormwater Pollution
- TSS Mercury
- MWAT Thermal Profiles, Salmon and Sturgeon Fish Counts, Meadow Assessments
- Arsenic, General Habitat Conditions
- Streamwalk Assessments



Quantity of Sites Monitored



**Total number of sites reported
as being monitored = 1,423 sites**

Average number of sites monitored/Group = 28

Range: 0 – 252

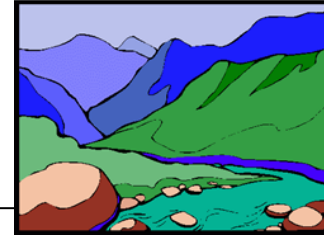
Based on 53 Responses – 51 Usable Entries

Potentially 2,800 Sites currently being monitored

Assuming normal distribution of sample and
population of groups monitoring by site and not
assessing stream miles



Number of Miles Assessed

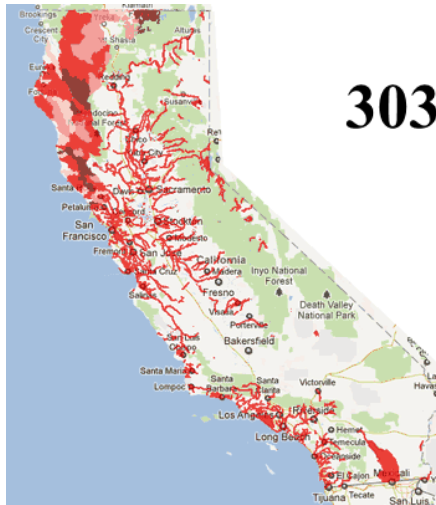


**Total number of stream/coastline miles
reported as being assessed = 353 miles**

Average number of miles assessed/Group = 14

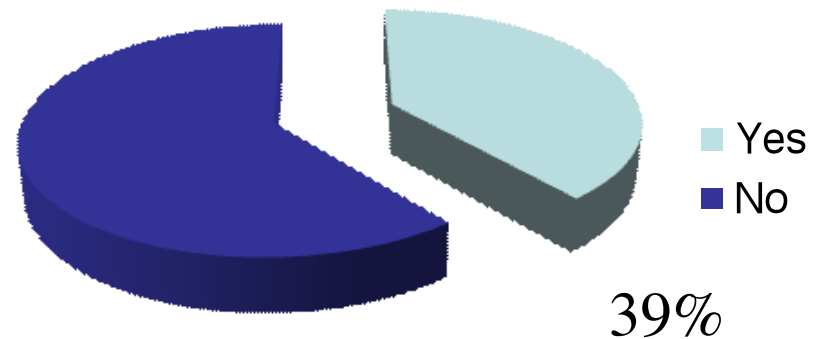
Range: 1 – 58

Based on 18 Usable Responses



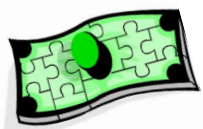
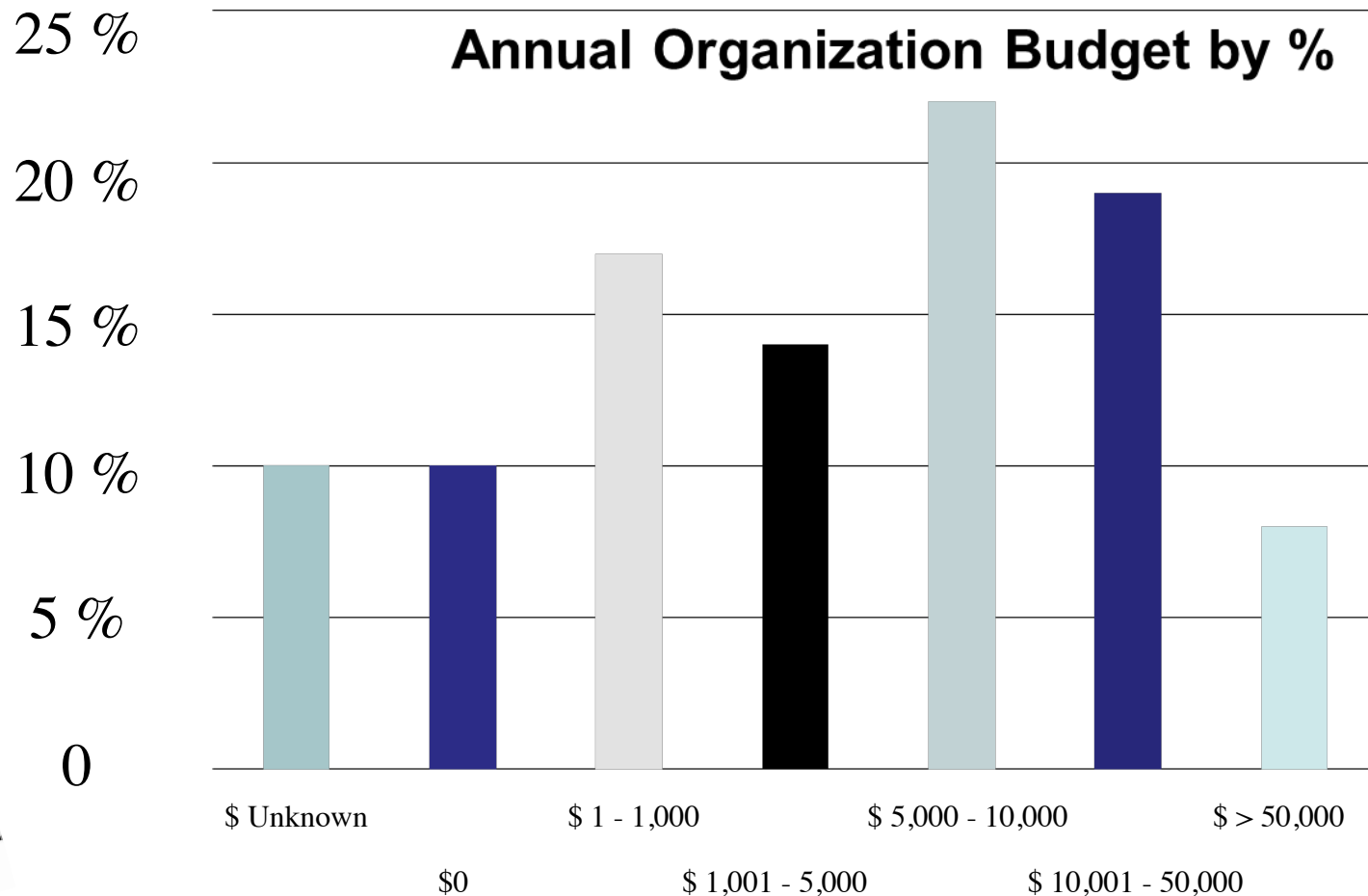
303(d) List

Citizen Monitoring Groups That Have Submitted Data per the SWRCB's Solicitation



CWA section 303(d) requires states to identify waters that do not meet, or are not expected to meet by the next listing cycle, applicable water quality standards after the application of certain technology-based controls and schedule such waters for development of Total Maximum Daily Loads (TMDLs) [40 Code of Federal Regulations (CFR) 130.7(c) and (d)].





REPORTED ANNUAL BUDGETS

Total Reported Budgets: \$ 1,068,859
 Budget Range: Unknown – \$600,000
 Mean: \$18,752

POTENTIAL ANNUAL BUDGETS

100 Groups \$1,875,200
 250 Groups \$4,688,000

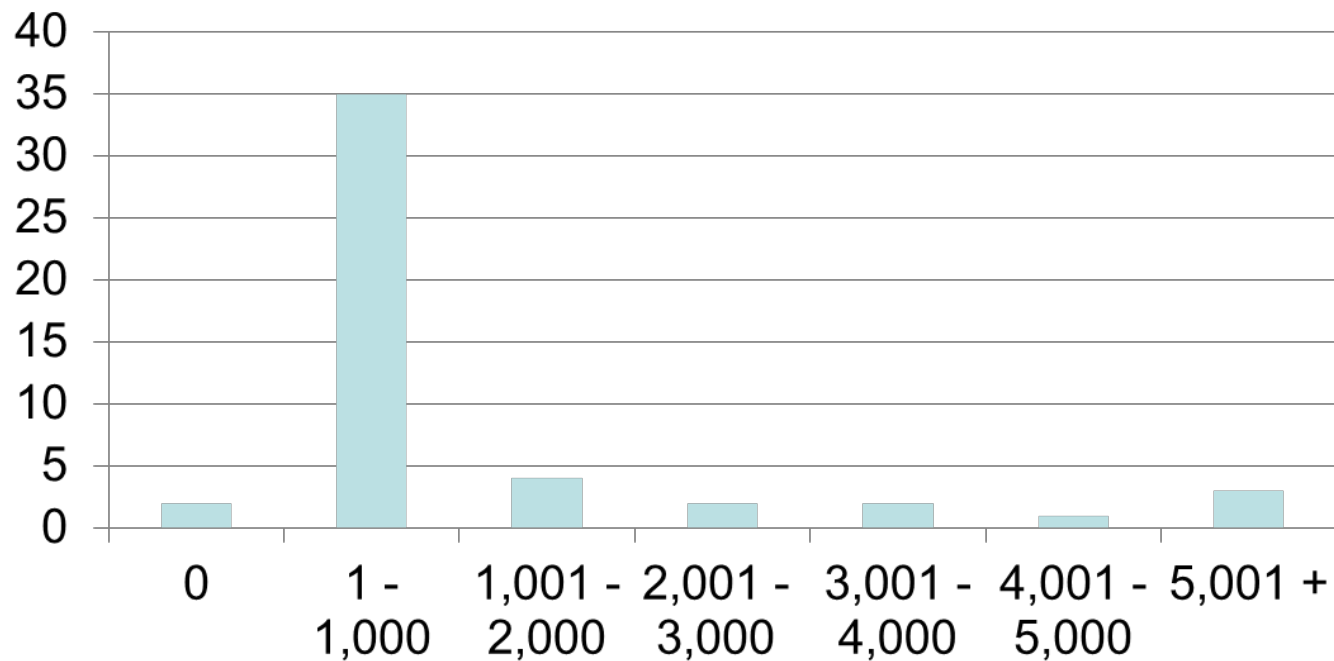


Annual Volunteer Hours

Total Annual Volunteer Hours Reported: 53,384 hours
Mean: 1,112 hours
Range: 0 – 12,500
5 Unknown, 1 Not Reported, 3 Not Applicable



Organizations by - Percent Annual Volunteer Hours Realized



Valuation of Annual Volunteer Hours

Annual Value of CA Citizen Monitoring Volunteer Hours

As Reported: \$ 1,140,282.24

Potential 100 Groups: \$ 2,375,232.00

Potential 250 Groups: \$ 5,938,080.00

History of the Dollar Value of a Volunteer Hour: 2010 – 2011*

2010: \$21.36

2011: \$21.79

Dollar Value of a Volunteer Hour, by State: California*

2009: \$23.42

2010: \$24.18

*http://www.independentsector.org/volunteer_time



Citizen Monitoring Contributions

Total Reported Budgets and Volunteer Hours (53,384 hours @ \$21.36)
 $\$1,068,859 + 1,140,282.24 = \mathbf{\$2,209,141.24}$

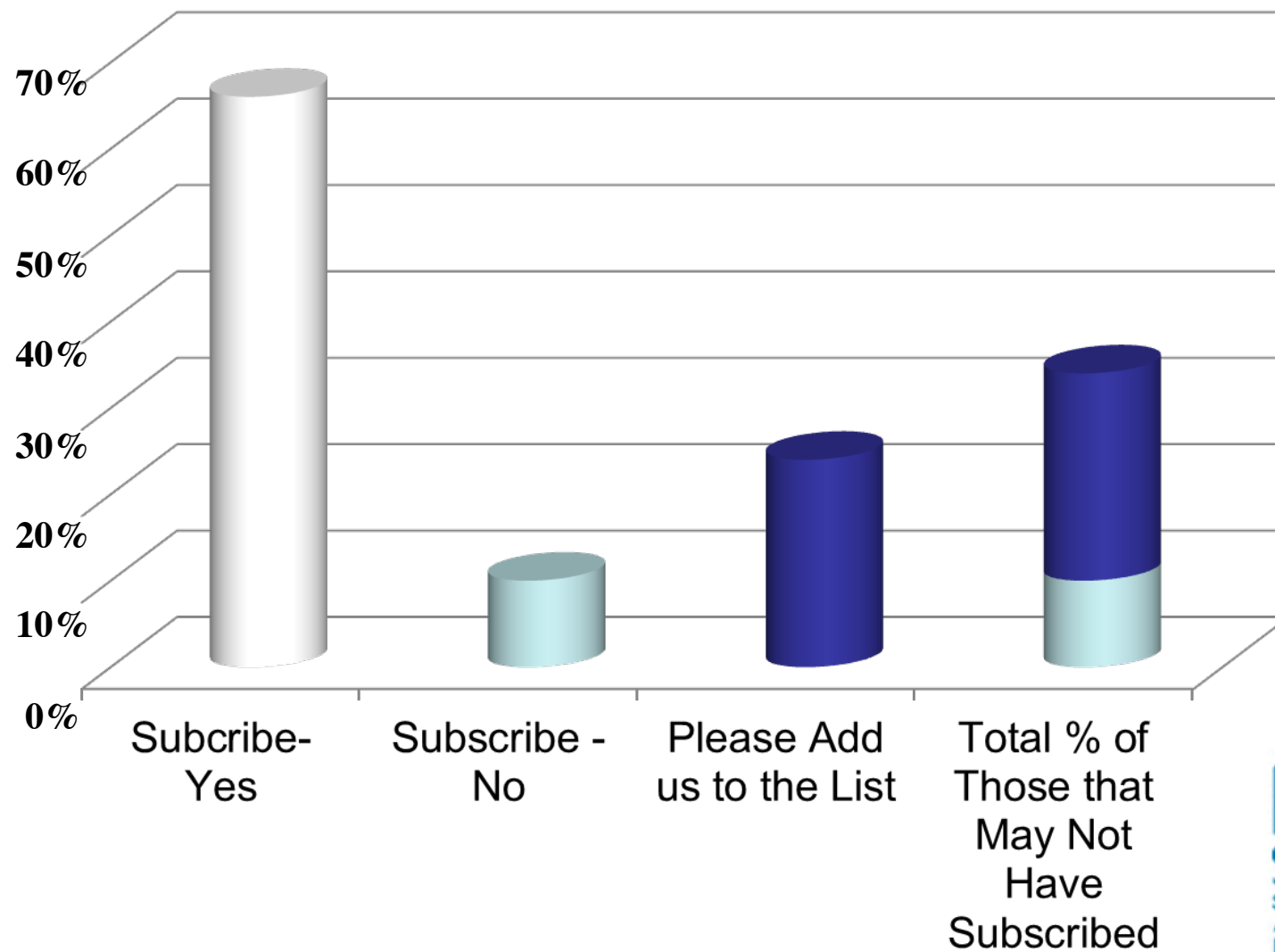
**Potential Annual Value of CA Citizen Budget
and Valuated Volunteer Hours**

Potential 100 Groups: \$ **4,240,432.00**

Potential 250 Groups: \$ **10,626,080.00**



Clean Water Team Email Subscription Usage



Conclusion

Citizen Monitoring Groups are making significant contributions to water quality monitoring in California.

These groups are not only important watershed management stakeholders but also valuable collaborators.

With today's economic climate and current demands for water, and the beneficial uses it provides we cannot afford to overlook supporting, implementing and/or partnering with Citizen Monitoring Projects.

